Claims 17 – 22 have been rejected as unpatentable over U.S. Pat. No. 5,990,000 ("Hong") in view of U.S. Pat. No. 6,030,881 ("Papasouliotis"). Applicant notes specifically that the present application and Hong were, at the time the invention of this application was made, owned or subject to an assignment obligation to Applied Materials, Inc. This fact is further evidenced by the assignment notification on the face of Hong and the recordation of an assignment of the parent of the present application to Applied Materials, Inc., recorded at Reel 011106, Frame 0440 on November 13, 2000. Since the issue date of Hong is less than a year prior to the filing date of the present application, it is believed that 35 USC § 103(c) disqualifies Hong as prior art against the claimed invention.

Minor amendments have been made to the specification to recite the priority claim and to update the status of cited applications.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

Patrick M. Boucher
Reg. No. 44,037

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: (303) 571-4000
Fax: (303) 571-4321
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DE 7069180 v1

APPENDIX

1. Specification

The specification has been amended to add the following section on page 1 of the application before the section entitled "BACKGROUND OF THE INVENTION":

-- CROSS REFERENCE TO RELATED APPLICATION

This application is a divisional of U.S. Pat. No. 6,335,288, filed August 24, 2000. --

The paragraph at p. 15, l. 25 – p. 16, l. 2 has been amended to read as follows, with deleted material shown in square brackets and added material underlined:

An example of a system that may incorporate some or all of the subsystems and routines described above would be the ULTIMA™ system, manufactured by APPLIED MATERIALS, INC., of Santa Clara, California, configured to practice the present invention. Further details of such a system are disclosed in **[the copending,]** commonly assigned U.S. Patent **[Application]** No. **[08/679,927]** 6,170,428, filed July 15, 1996, entitled "Symmetric Tunable Inductively-Coupled HDP-CVD Reactor," having Fred C. Redeker, Farhad Moghadam, Hirogi Hanawa, Tetsuya Ishikawa, Dan Maydan, Shijian Li, Brian Lue, Robert Steger, Yaxin Wang, Manus Wong and Ashok Sinha listed as co-inventors, the disclosure of which is incorporated herein by reference. The described system is for exemplary purpose only. It would be a matter of routine skill for

a person of skill in the art to select an appropriate conventional substrate processing system and computer control system to implement the present invention.

2. Claims

The pending claims have not been amended and read as follows:

17. (Unchanged) A computer-readable storage medium having a computer-readable program embodied therein for directing operation of a substrate processing system including a process chamber; a plasma generation system; a substrate holder; and a gas delivery system configured to introduce gases into the process chamber, the computer-readable program including instructions for operating the substrate processing system to deposit a dielectric film on a substrate disposed in the process chamber in accordance with the following:

(a) providing a first gaseous mixture to the process chamber, the first gaseous mixture comprising a first deposition gas and a first inert gas source;

(b) generating a first high-density plasma from the first gaseous mixture to deposit a first portion of the film on the substrate with a first deposition/sputter ratio within the range of 5 – 12, wherein the first deposition/sputter ratio is defined as a ratio of a sum of a first net deposition rate and a first blanket sputtering rate to the first blanket sputtering rate;

(c) thereafter, cooling the substrate;

(d) thereafter, flowing an etchant gas into the process chamber;

(e) thereafter, providing a second gaseous mixture to the process chamber, the second gaseous mixture comprising a second deposition gas and a second inert gas source; and

(f) generating a second high-density plasma from the second gaseous mixture to deposit a second portion of the film on the substrate.

18. (Unchanged) The computer readable storage medium according to claim 17 wherein the second high-density plasma is generated to deposit the second portion of the film with a second deposition/sputter ratio within the range of 5 – 20, wherein the second deposition/sputter ratio is defined as a ratio of a sum of a second net deposition rate and a second blarket sputtering rate to the second blanket sputtering rate.

19. (Unchanged) The computer-readable storage medium according to claim 17 wherein the dielectric film is to be deposited over a plurality of stepped surfaces formed on the substrate having gaps formed between adjacent ones of the stepped surfaces and wherein the first portion of the film partially fills the gaps.

20. (Unchanged) A substrate processing system comprising:

(a) a housing defining a process chamber;

(b) a high-density plasma generating system operatively coupled to the process chamber;

(c) a substrate holder configured to hold a substrate during substrate processing;

(d) a gas-delivery system configured to introduce gases into the process chamber;

(e) a pressure-control system for maintaining a selected pressure within the process chamber;

(f) a controller for controlling the high-density plasma generating system, the gas-delivery system, and the pressure-control system; and

(g) a memory coupled to the controller, the memory comprising a computer-readable medium having a computer-readable program embodied therein for directing operation of the substrate processing system, the computer-readable program including

(i) instructions to control the gas-delivery system to provide a first gaseous mixture to the process chamber, the first gaseous mixture comprising a first deposition gas and a first inert gas source;

(ii) instructions to control the high-density plasma generating system to generate a first high-density plasma from the first gaseous mixture to deposit a first portion of the film on the substrate with a first deposition/sputter ratio within the range of 5 – 20, wherein the first deposition/sputter ratio is defined as a ratio of a sum of a first net deposition rate and a first blanket sputtering rate to the first blanket sputtering rate;

(iii) instructions to control the gas-delivery system thereafter to flow a heat-transfer gas to cool the substrate;

(iv) instructions to control the gas-delivery system thereafter to flow an etchant gas into the process chamber;

(v) instructions to control the gas-delivery system thereafter to provide a second gaseous mixture to the process chamber, the second gaseous mixture comprising a second deposition gas and a second inert gas source; and

(vi) instructions to control the high-density plasma generating system to generate a second high-density plasma from the second gaseous mixture to deposit a second portion of the film on the substrate.

21. (Unchanged) The substrate processing system according to claim 20 wherein the instruction to generate a second high-density plasma comprise instructions to deposit the second portion of the film with a second deposition/sputter ratio within the range of 5 – 20, wherein the second deposition/sputter ratio is defined as a ratio of a sum of a second net deposition rate and a second blanket sputtering rate to the second blanket sputtering rate.

22. (Unchanged) The substrate processing system according to claim 20 wherein the dielectric film is to be deposited over a plurality of stepped surfaces formed on the substrate having gaps formed between adjacent ones of the stepped surfaces and wherein the first portion of the film partially fills the gaps.

DE 7069180 v1